MAT2440 Module 0 – An introduction to trinket.io and python.

Objectives: Learn to use some basic python commands.

1. Go to `https://trinket.io/` and create an account. This will help you create and manage your own work. Create a new trinket titled "2440 Module 0" to begin today's activities. Type all of today's work into this trinket.

2. Basics:

   (a) The print command prints variables and strings to the screen.

   ```
   print "Hello world!"
   x = 3
   print x
   print 3+4
   x = 5
   print x
   ```

   (b) Comments let you insert text into your code that is not executed. This will help to remind you (and others) what your code does.

   ```
   print #"Hi there!"
   ```

   (c) Lists help you organize and manipulate data.

   ```
   a = [1,2,3,5]
   print a
   print a[0]   #this picks out elements (starting with element 0)
   print len(a) #len is a function that gives the length of the list
   ```

   (d) Mathematical functions like e^x, $\sin(x)$ have to be imported from another file. Use the following link to see what other functions are available: `https://docs.python.org/2/library/math.html`.

   ```
   import math

   print math.exp(1)   #math.exp(x) is the exponential function
   print math.pi       #the constant 3.1415926...
   print math.cos(math.pi/4)
   ```

3. Write code to do the following:

   (a) Print a string that contains your full name.

   (b) Print the length of the string from the previous question. (Hint: Strings are lists where each element is a single character.)

   (c) Compute and print $3 + 4/2$. Are you surprised by the result?

   (d) Compute and print $e^{-\pi}$.

   (e) Are the trigonometric functions assuming that the input is in degrees or radians?

   (f) Compute and print $2^{2/3}$. (Hint: You will need to find an appropriate function using the math library link listed above.)